

CLAIMS

What is claimed is:

1. A method of port type agnostic proxy support for web services intermediaries, the method comprising:
  - 5 receiving in a web services intermediary a request for execution of a web services operation, wherein the request includes parametric information from which an endpoint for a target service that supports the operation can be identified;
  - 10 identifying, in dependence upon the parametric data, the endpoint for a target service that supports the operation;
  - determining whether the request requires a synchronous response;
  - 15 creating a target service request for execution of the operation on the target service;
  - issuing the target service request to the target service; and
  - 20 waiting for a response from the target service if the request requires a synchronous response.
2. The method of claim 1 wherein determining whether the request requires a synchronous response comprises determining in dependence upon the

parametric information whether the request requires a synchronous response.

3. The method of claim 1 wherein creating a target service request for execution of the operation on the target service further comprises creating the target service request in dependence upon a determination whether the request requires a synchronous response.

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4. The method of claim 1 wherein the request does not require a synchronous response, and the method further comprises:

receiving from the target service an acknowledgment of the target service request; and

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returning the acknowledgement to a requester without waiting for a response message.

5. The method of claim 1 wherein waiting for a response from the target service further comprises:

receiving synchronously in the intermediary a response from the target service;

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creating in the intermediary, in dependence upon the response from the target service, a response from the intermediary; and

returning the response from the intermediary to a requester.

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6. The method of claim 5 wherein receiving synchronously in the intermediary a

response from the target service further comprises invoking a blocking receive function on a data communications connection between the intermediary and the target service.

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7. The method of claim 1 further comprising identifying to a requester an endpoint of the web services intermediary as an endpoint that supports the operation.

8. The method of claim 1 wherein the parametric information includes a port type for the operation.

9. The method of claim 1 wherein identifying, in dependence upon the parametric information, the endpoint for a target service that supports the operation further comprises:

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identifying, in dependence upon the parametric information, a multiplicity of endpoints of target services that support the operation; and

selecting one endpoint from the multiplicity of endpoints in accordance with selection rules.

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10. The method of claim 9 wherein:

the parametric information includes a port type for the operation, and

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identifying, in dependence upon the parametric information, a multiplicity of endpoints of target services that support the operation comprises identifying

from a registry, in dependence upon the port type, a multiplicity of target services for the port type.

11. A system for port type agnostic proxy support for web services intermediaries, the system comprising:
- 5 means for receiving in a web services intermediary a request for execution of a web services operation, wherein the request includes parametric information from which an endpoint for a target service that supports the operation can be identified;
- 10 means for identifying, in dependence upon the parametric data, the endpoint for a target service that supports the operation;
- means for determining whether the request requires a synchronous response;
- 15 means for creating a target service request for execution of the operation on the target service;
- means for issuing the target service request to the target service; and
- 20 means for waiting for a response from the target service if the request requires a synchronous response.
12. The system of claim 11 wherein means for determining whether the request requires a synchronous response comprises means for determining in dependence upon the parametric information whether the request requires a synchronous response.
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13. The system of claim 11 wherein means for creating a target service request for

execution of the operation on the target service further comprises means for creating the target service request in dependence upon a determination whether the request requires a synchronous response.

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14. The system of claim 11 wherein the request does not require a synchronous response, and the system further comprises:

means for receiving from the target service an acknowledgment of the target service request; and

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means for returning the acknowledgement to a requester without waiting for a response message.

15. The system of claim 11 wherein means for waiting for a response from the target service further comprises:

means for receiving synchronously in the intermediary a response from the target service;

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means for creating in the intermediary, in dependence upon the response from the target service, a response from the intermediary, and

- 10 means for returning the response from the intermediary to a requester.

16. The system of claim 15 wherein means for receiving synchronously in the intermediary a response from the target service further comprises means for invoking a blocking receive function on a data communications connection

between the intermediary and the target service.

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17. The system of claim 11 further comprising means for identifying to a requester an endpoint of the web services intermediary as an endpoint that supports the operation.

18. The system of claim 11 wherein the parametric information includes a port type for the operation.

19. The system of claim 11 wherein means for identifying, in dependence upon the parametric information, the endpoint for a target service that supports the operation further comprises:

5 means for identifying, in dependence upon the parametric information, a multiplicity of endpoints of target services that support the operation; and

means for selecting one endpoint from the multiplicity of endpoints in accordance with selection rules.

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20. The system of claim 19 wherein:

the parametric information includes a port type for the operation, and

5 means for identifying, in dependence upon the parametric information, a multiplicity of endpoints of target services that support the operation comprises means for identifying from a registry, in dependence upon the port type, a multiplicity of target services for the port type.

21. A computer program product for port type agnostic proxy support for web services intermediaries, the computer program product comprising:

a recording medium;

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means, recorded on the recording medium, for receiving in a web services intermediary a request for execution of a web services operation, wherein the request includes parametric information from which an endpoint for a target service that supports the operation can be identified;

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means, recorded on the recording medium, for identifying, in dependence upon the parametric data, the endpoint for a target service that supports the operation;

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means, recorded on the recording medium, for determining whether the request requires a synchronous response;

means, recorded on the recording medium, for creating a target service request for execution of the operation on the target service;

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means, recorded on the recording medium, for issuing the target service request to the target service; and

25 means, recorded on the recording medium, for waiting for a response from the target service if the request requires a synchronous response.

22. The computer program product of claim 21 wherein means for determining



whether the request requires a synchronous response comprises means, recorded on the recording medium, for determining in dependence upon the parametric information whether the request requires a synchronous response.

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23. The computer program product of claim 21 wherein means for creating a target service request for execution of the operation on the target service further comprises means, recorded on the recording medium, for creating the target service request in dependence upon a determination whether the request requires a synchronous response.

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24. The computer program product of claim 21 wherein the request does not require a synchronous response, and the system further comprises:

means, recorded on the recording medium, for receiving from the target service an acknowledgment of the target service request; and

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means, recorded on the recording medium, for returning the acknowledgement to a requester without waiting for a response message.

25. The computer program product of claim 21 wherein means for waiting for a response from the target service further comprises:

means, recorded on the recording medium, for receiving synchronously in the intermediary a response from the target service;

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means, recorded on the recording medium, for creating in the intermediary, in dependence upon the response from the target service, a response from the

intermediary; and

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means, recorded on the recording medium, for returning the response from the intermediary to a requester.

26. The computer program product of claim 25 wherein means for receiving synchronously in the intermediary a response from the target service further comprises means, recorded on the recording medium, for invoking a blocking receive function on a data communications connection between the
- 5 intermediary and the target service.

27. The computer program product of claim 21 further comprising means, recorded on the recording medium, for identifying to a requester an endpoint of the web services intermediary as an endpoint that supports the operation.

- 5 28. The computer program product of claim 21 wherein the parametric information includes a port type for the operation.

29. The computer program product of claim 21 wherein means for identifying, in dependence upon the parametric information, the endpoint for a target service that supports the operation further comprises:

- 5 means, recorded on the recording medium, for identifying, in dependence upon the parametric information, a multiplicity of endpoints of target services that support the operation; and

means, recorded on the recording medium, for selecting one endpoint from the

10           multiplicity of endpoints in accordance with selection rules.

30.    The computer program product of claim 29 wherein:

          the parametric information includes a port type for the operation, and

5           means for identifying, in dependence upon the parametric information, a  
          multiplicity of endpoints of target services that support the operation  
          comprises means, recorded on the recording medium, for identifying from a  
          registry, in dependence upon the port type, a multiplicity of target services for  
          the port type.

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